

Blue Shp Sept. 28

Work Order ID 61959

Monday, September 13, 2010 10:08:14 AM



Page 1

Item ID: D206-667-203BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft, Blue

Stop



Start Date: 9/14/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 9/24/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: ✓

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-243

C

100

0.00



DOCUMENT CONTROL

DC

Memo 0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

10/09/2010 BG 10-9-28

5/10/09/28

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo 0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-243 using CNC bender program D206-667-203

IX *10/09/15*

120

0.00



QC15- Crosstube Dimensional Check

QC

Memo 0.00

Quality Control

5/10/09/15

41

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Reference:

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Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

130

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberReject
NumberInsp.
Stamp

Crosstubes

Crosstubes

0.00

0.00

①

Crosstubes

Memo

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 and drill table DT8577 and tower holes #6 as per QSI0010 and as per Dwg D206-667-243. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

6-Drill Fwd rivet holes using drill Jig DT8789FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D206-667-243.

8-C'sink holes as per Dwg D206-667-243.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-243 Inside of Cuff(Donot engrave on outside of tube)

10 -Deburr & Inspect for surface damage. Repair damage within limits as per

SPD/MS
10-09-16

DP 10-9-20

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Page 3

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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
StampDwg
D206-667-243

140



Crosstubes Chemical Conversion

0.00

HandFXtube

Hand Finishing Crosstubes

Memo

0.00

150



QC3- Inspect Part Finish

0.00

QC

Quality Control

Memo

0.00

160



QC5- Inspect part completeness to step on W/O

0.00

QC

Quality Control

Memo

0.00

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

170



Outsource2

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberReject
NumberInsp.
Stamp

Outsource process - NDT per QSI038 4.1

0.00

CL 10/9/22 (1)

Outsource process - NDT

Memo

0.00

Liquid Penetrant Inspection as per QSI 038Or
Issue P/O: 12615
LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

180



Packaging

Packaging

0.00

CL 10/9/22 (1)

Packaging

Memo

0.00

Ensure copy of NDT results attached to work order.

190



QC

QC5- Inspect part completeness to step on W/O

0.00

ml 10 09 22 (1)

Quality Control

Memo

0.00

Ensure results are as per Dwg D206-667-243

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Page 5

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberReject
NumberInsp.
Stamp

200



SprayPaint

0.00

W 10 09 22 (1)

SprayPaint

Memo

0.00

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube

DELFLEET BLUE B 113171

CLEAR DELFLEET B 10896

PRIME:

Start Time: 9:00

Finish Time: 10:00

PAINT:

Start Time: 2:00

Finish Time: 3:00

210



QC14- Inspect Spray Paint

0.00

AT 10-09-23 (1)

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

W/O:		WORK ORDER CHANGES					
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Page 6

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Customer:

Reference:

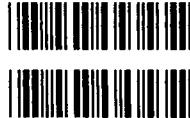
Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center ID

220



Crosstubes

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

0.00

 10 09 23 0

230



Crosstubes

Skidtubes

0.00

0.00

 10 09 23 0

Crosstubes

Memo

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (3) top holes should be facing up.

A/R Magnobond 6398: 14158 exp. 01/2011

2-Install supports and clamps as per Dwg D206-667-243. Torque clamps to 80-100 in lb

ml 10 09 27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Monday, September 13, 2010 10:08:14 AM



Page 7

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Start Date: 9/14/2010 Start Qty: 1.00

Accept



Setup Start



Required Date: 9/24/2010 Req'd Qty: 1.00



Cust Item ID:



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

240



QC

Quality Control

Operation
Description

QC5- Inspect part completeness to step on W/O

Set Up/
Run Hours

0.00

0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

S10/09/23

QC

250



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

Ceo/10/09/23

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

S10/09/28

QC

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 8

Item ID: D206-667-203BL

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Item Name: Crosstube Aft, Blue

Stop



Start Date: 9/14/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 9/24/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

270



Packaging

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

10/09/2010

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-203
Location: 145
PPP Rev: 15

280



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

10/09/2010

MF

10-9-28

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

Monday, September 13, 2010 10:08:13 AM

Page 1

Work Order ID: 61959



Parent Item: D206-667-203BL



Parent Item Name: Crosstube Aft, Blue

Start Date: 9/14/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN5-10A 		Purchased	No				Each	255.0000	10	10			
-------------	--	-----------	----	--	--	--	------	----------	----	----	--	--	--

Bolt

Location	Loc Qty	Loc Code
ST337	255	
114752	5	
115108	100	1115108
115429	50	
115589	100	

AN5-32A 		Purchased	No				Each	240.0000	4	4			
-------------	--	-----------	----	--	--	--	------	----------	---	---	--	--	--

Bolt

Location	Loc Qty	Loc Code
ST340	240	
113121	4	
114056	26	1114056
114405	50	
115016	50	
115108	50	
115589	60	

AN5-34A 		Purchased	No				Each	72.0000	4	4			
-------------	--	-----------	----	--	--	--	------	---------	---	---	--	--	--

Bolt

Location	Loc Qty	Loc Code
ST340	72	
113149	22	
113226	50	1113149

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 2

Monday, September 13, 2010 10:08:13 AM

Work Order ID: 61959



Parent Item: D206-667-203BL



Parent Item Name: Crosstube Aft, Blue

Start Date: 9/14/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

AN960JD516

NAS1149D0563J Purchased

No

Each

34.0000

18

18



M114742 60

Washer

D206-667-203TRN



Manufactured

No

Loc Qty

Loc Code

Location

ST	34
103694	18
107534	12
109287	4

Each

4.0000

1

1



MB 10-09-14

Crosstube Turning Detail

Location

Loc Qty

Loc Code

LG	4
61446	1
61447	1
61448	1
61449	1

Each

32.0000

2

2



IX 10-09-23

D2873-043



Manufactured

No

Location

Loc Qty

Loc Code

LG	12
57337	12
ST	20
60981	20

Nut Plate Assembly

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 3

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Parent Item: D206-667-203BL



Parent Item Name: Crosstube Aft, Blue

Start Date: 9/14/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

D2873-045



Manufactured No

Each 28.0000

2 2



Nut Plate Assembly

M1 10-09-23

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	28	
<u>57336</u>	8	
<u>60982</u>	20	

D2892-1



Manufactured No

Each 44.0000

2 2



Support

M1 10-09-23

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	44	
41986	12	
42785	20	
53124	8	
<u>55787</u> X1	1	
<u>61631</u> X1	3	

ATTN:BLUE

D3595-063-450



Manufactured No

Each 131.6590

4 4



RUBBER CUSHION

M1 10-09-23

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	131.6589737	
53775	5.97897368	
58161	3.56	
59580	10.12	
<u>60983</u>	33	
61465	79	

W/O:		WORK ORDER CHANGES					
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Parent Item Name: Crosstube Aft, Blue

Start Date: 9/14/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W10

Purchased

No

Each

116.0000

14

14



ML 10-09-23

RIVET

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	LG051	102	
	114245	2	
	<u>115405</u>	100	
	ST322	14	
	113220	14	

MS21042L5

Purchased

No

Each

1,105.000

4



CL 105/28

Nut

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	ST139	105	
	114813	105	
	ST300	1000	
	115156	500	
	115594	500	

MS21920-22

Purchased

No

Each

86.0000

4



Clamp(per MIL-DTL-8783C)

	<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
	LG	86	
	<u>114077</u>	86	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

DART AEROSPACE LTD

Work Order: 61989

Description: Crosstube High Aft (206L)

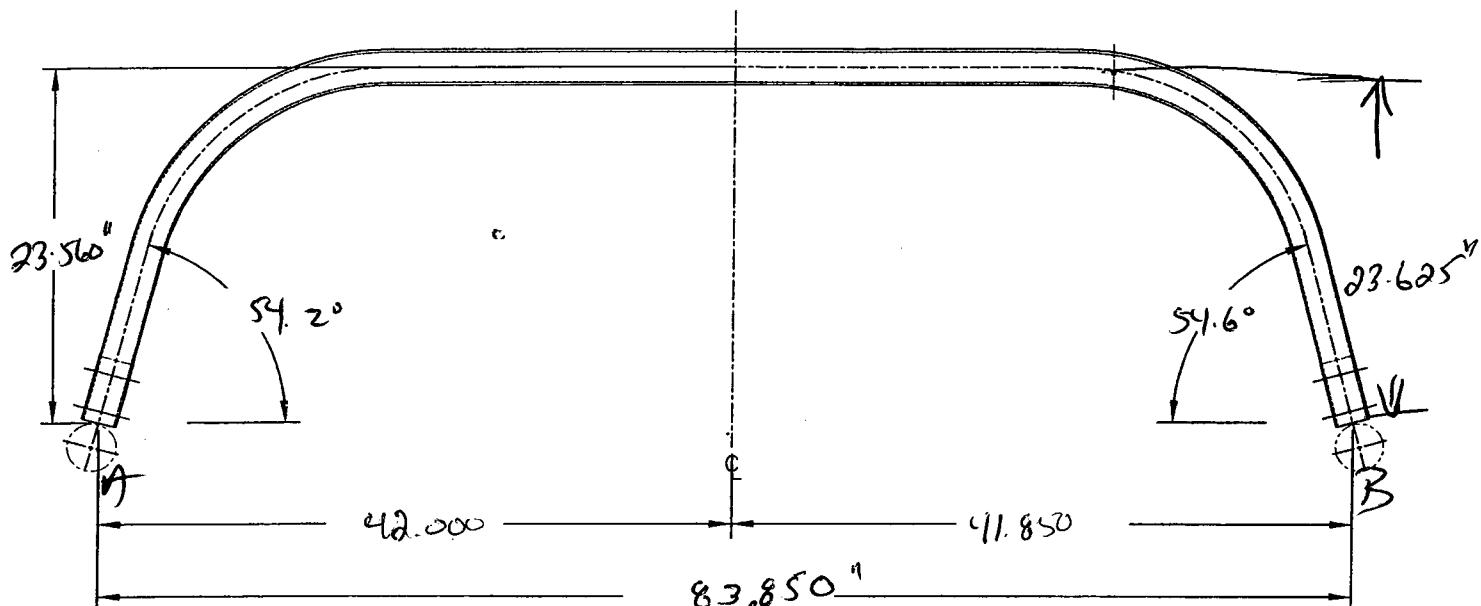
Part Number: D206-667-203

Inspection Dwg: D206-667-243

Rev: C

Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.1



Comments

QC15 Inspection	S
Date	10/05/15

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.17	Dwg Rev updated	KJ	
C	09.12.14	Dimensions update per Dwg Rev C	KJ	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

D

D

Item	Qty	Part Number	Description
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

07/06/95

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91 ± 0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
08/11/95

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D8-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO. D206-667-243 REV. C SHEET 1 OF 4	
CHECKED	70	MFG. APPR. APPROVED DE APPR.	
MFG. APPR.	E	TITLE CROSSTUBE ASSY (206L HIGH AFT) NTS	
APPROVED		DATE 08.11.06	
DE APPR.		COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED OR PROVIDED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

A

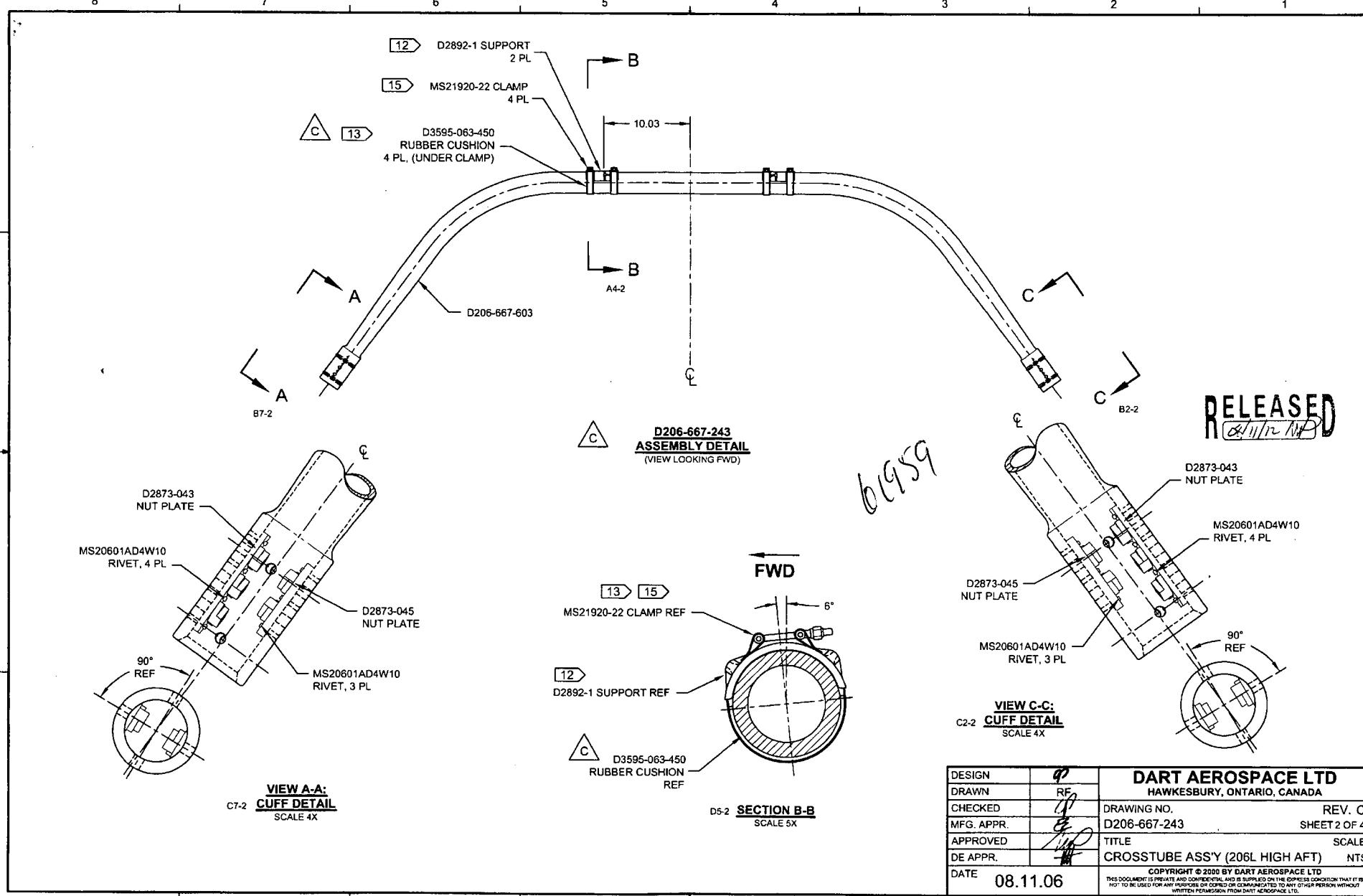
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



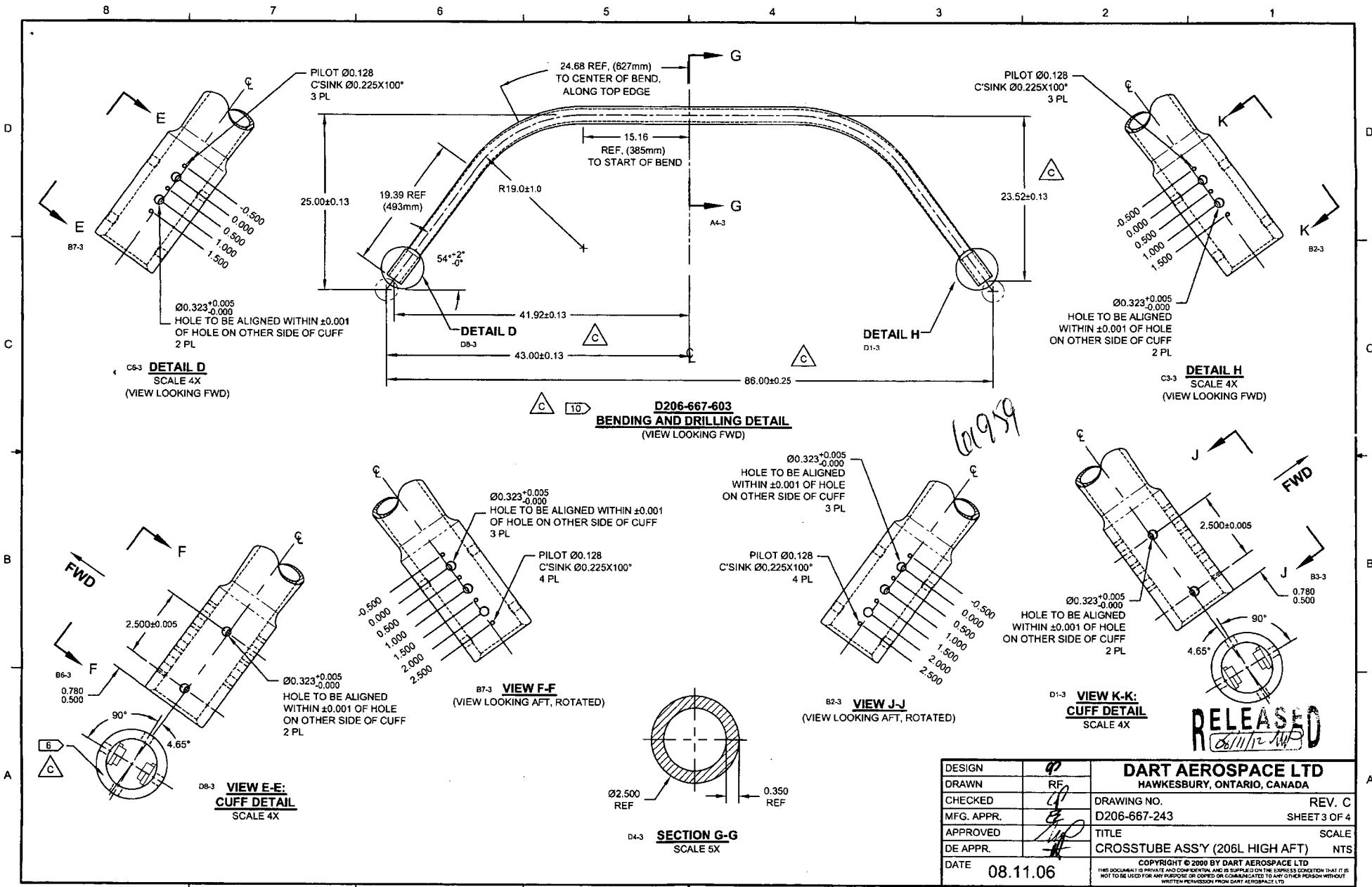
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	99	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	19	DRAWING NO.	REV. C
MFG. APPR.	33	D206-667-243	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSY (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN CONSENT OF DART AEROSPACE LTD.	

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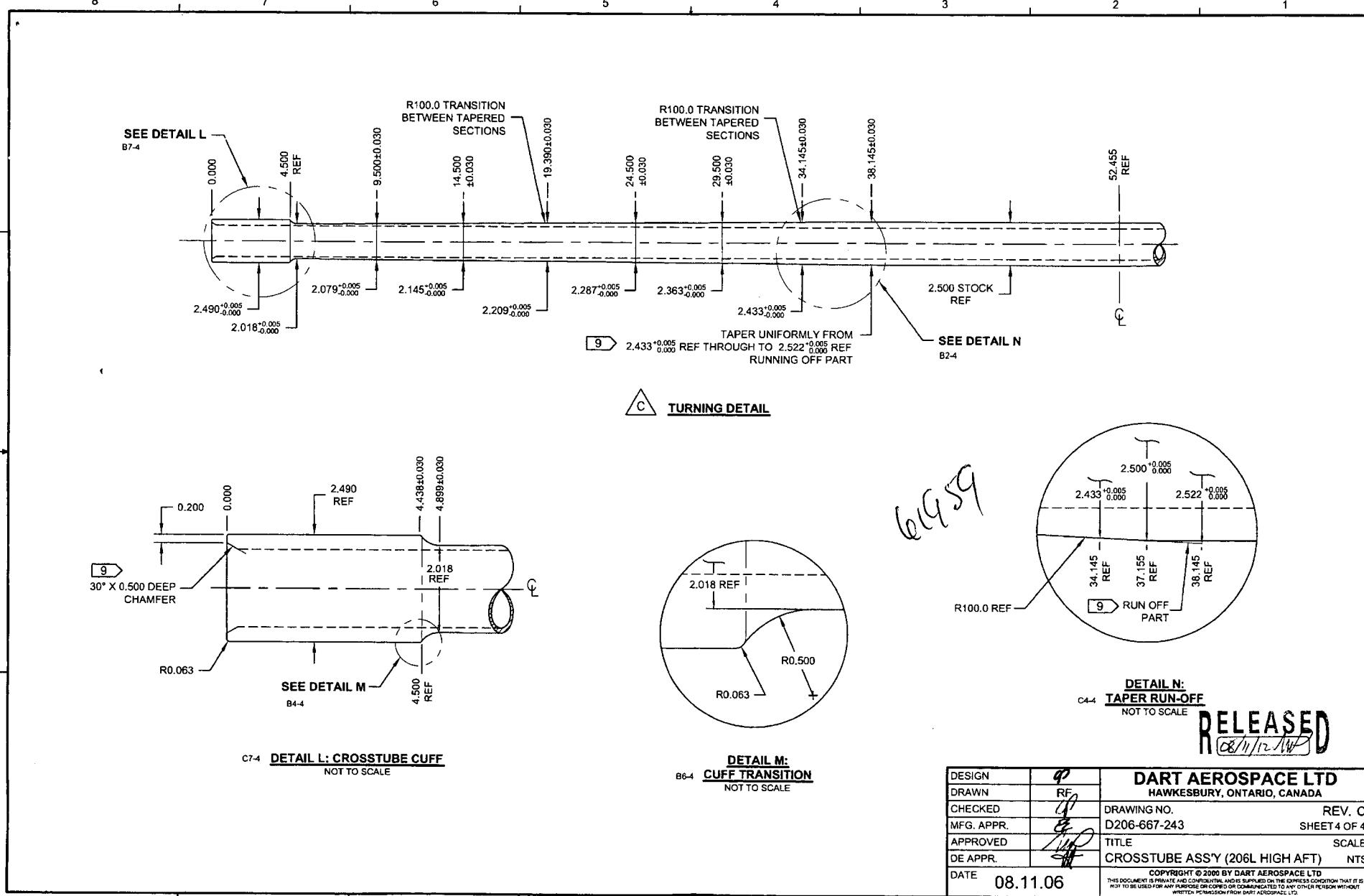
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	9	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	9	REV. C
MFG. APPR.	9	DRAWING NO. D206-667-243 SHEET 4 OF 4
APPROVED	9	TITLE SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L HIGH AFT) NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 15193

CLIENT DAET Aerospace
 ATTENTION LINDA / CHANTEL
 ADDRESS 1270 ABERDEEN ST.
HAWKES BAY, ON.
 PROJECT F. P. I. (10) ON CLASS TUBES &
 ITEM(S) EXAMINED (2) MACHINED PARTS

DATE SEPT 21 2010 TIME 18:00 - 10-0889 AM PM
 ACUREN JOB NO. 12613
 PO/WO NO. 12613
 WORK LOCATION HAWKES BAY PLANT
 ACCEPTANCE STD. ASTM 1417 REV./DATE 2005

JOB DESCRIPTION	PROCEDURE NO. LT0001	REV./DATE	TECHNIQUE NO. LT Tech 2	REV./DATE
PART NO.	MATERIAL <u>STAINLESS STEEL</u> THICKNESS <u>1.5MM</u>			
SCOPE	<u>WET FLUORESCENT LIQUID PENETRANT + ALUMINUM INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE</u>			
TEST DETAILS				
METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE
FAMILY BRAND	<u>MAGNA FLUX</u>			
PENETRANT	<u>2L67</u>	MINIMUM DWELL TIME <u>45</u> MIN.	<u>POST EMULSIFIED</u>	
PENETRANT REMOVER	<u>H2O</u>	MINIMUM DRY TIME <u>>10</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT	<input type="checkbox"/> TROUBLELIGHT
DEVELOPER	<u>SKD 52</u>	MINIMUM DWELL TIME <u>10</u> MIN.	OTHER <u>LA3 NO</u>	OUTPUT > 1000 μ W/cm ²
DEVELOPER TYPE	<input type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	LIGHT METER S/N <u>1098866</u>	CAL DUE DATE <u>OCT 11 2010</u>

TEST SURFACE				
SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input checked="" type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F			

RESULTS- <input checked="" type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL	<p>7 SLEEVE'S → W.O. 62188 ✓</p> <p>1 CROSS TUBE → W.O. 62298 ✓</p> <p>1 CROSS TUBE → W.O. 62299 ✓</p> <p>1 CROSS TUBE → W.O. 61418 ✓</p> <p>1 CROSS TUBE → W.O. 61417 ✓</p> <p>1 CROSS TUBE → W.O. 61959 ✓</p> <p>1 CROSS TUBE → W.O. 61958 ✓</p> <p>1 CROSS TUBE → W.O. 61852 ✓</p> <p>1 CROSS TUBE → W.O. 61853 ✓</p> <p>1 CROSS TUBE → W.O. 61507 ✓</p> <p>1 CROSS TUBE → W.O. 61508 ✓</p>		
	<p>INDICATIONS ON CROSS TUBES W.O. #'S → 61852, 61853.</p> <p>10-09-22</p>		

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE	<u>Eric Doering</u> PRINT	<u> </u> SIGNATURE	DTR # <u>E03391</u>
TECHNICIAN (SIGNATURE):	<u>Mike J. Huston</u>		REPORT REVIEWED BY:
NAME (PRINT):	1 ST TECHNICIAN <u>Mike J. Huston</u>	2 ND TECHNICIAN <u> </u>	NAME <u> </u> INITIALS <u> </u>
CGSB LEVEL	<u>E</u> SNT LEVEL	CGSB LEVEL	SNT LEVEL
CGSB REG. NO.	<u>6606</u>	CGSB REG. NO.	<u> </u>

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